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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,986	12/07/2006	Ertugrul Arpac	P30321	2453

7055 7590 12/02/2009

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EXAMINER	
CHEN, VIVIAN	
ART UNIT	PAPER NUMBER
1794	

NOTIFICATION DATE	DELIVERY MODE
12/02/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com
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Office Action Summary	Application No.	Applicant(s)	
	10/589,986	ARPAC ET AL.	
	Examiner	Art Unit	
	Vivian Chen	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/10/08; 4/4/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The amendment filed 8/18/2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: in newly added claim 45, the limitation with respect to the abrasion value being less than 5 mg.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 45 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention for the reasons set forth in the objection to the Amendment filed 8/18/2009 under 35 U.S.C. 132(a) with respect to claim 45 and the newly added limitation regarding abrasion resistance.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 19-51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In the claims (e.g., 19, 36, 41-42, 47, 49, etc.), the term "low-energy surface" is a relative term which renders the claim indefinite. The term "low-energy" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

In the claims 43, 47, the term "substantially no vertical gradient" is a relative term which renders the claim indefinite. The term "substantially no" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

In the claim 44, the term "high temperature-resistant" is a relative term which renders the claim indefinite. The term "high temperature" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 19-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over:

BROTHERS ET AL (US 6,232,372),

in view of RAU ET AL (US 5,093,403).

BROTHERS ET AL discloses a coating composition comprising a polymer binder (e.g., polyether sulfone, polyimide, polyamide imide, polyamic acid salt, etc.) and a fluoropolymer (e.g., copolymers comprising tetrafluoroethylene and fluorovinyl ethers, etc), wherein both the fluoropolymer and the binder have functional groups (e.g., carboxyl groups, hydroxyl groups, etc.) which react with each other. The polymer binder and the fluoropolymer are present in typical ratios of 0.1/1 to 5/1. (entire document, e.g., line 15-30, col. 2 ; line 15-53, col. 4; line 58, col. 4 to line 18, col. 5; line 12, col. 9 to line 28, col. 10; line 5, col. 11 to line 3, col. 12; etc.) However, the reference does not explicitly disclose the recited inorganic particles.

RAU ET AL discloses that it is well known in the art to incorporate ceramic particles (e.g., silicon carbide, boride carbide, and other metal oxides, borides, and nitrides, etc.) having a typical diameter of 1-40 microns in amounts of 1-40 wt% in fluoropolymer-based coatings in order to provide enhanced adhesion and abrasion resistance. (line 5-10, col. 7; line 63, col. 7 to line 55, col. 8; line 64, col. 9 to line 13, col. 10)

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate known inorganic filler particles in the coating compositions of BROTHERS ET AL in order to improve adhesion to substrates and to provide increased hardness and abrasion resistance. One of ordinary skill in the art would have used known surface-treatment methods (claims 27-28, 39) in order to improve compatibility between the

particles and the resins, as well as to prevent particle settling and agglomeration which would result in a non-uniform layer (claim 43-47). It would have been obvious to incorporate known and commercially available additives typically used in the coating art (e.g., crosslinking agents and/or hardeners) (claims 32-33) in the coating compositions of BROTHERS ET AL in order to improve the mechanical and chemical properties (e.g., hardness, solvent resistance, etc.) of the resulting film or layer (claims 41-50). One of ordinary skill in the art would have adjusted the amount of particles, binder, and fluoropolymer in order to tailor the abrasion resistance and surface characteristics (claims 45-47) for specific applications. It would have been obvious to utilize the coatings of BROTHERS ET AL in conventional protective and stain-resisting applications (e.g., for building structures, etc.) (claim 51) where fluoropolymer-based coatings are typically used.

3. Claims 34, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over:
BROTHERS ET AL (US 6,232,372), in view of RAU ET AL (US 5,093,403),
as applied to claim 19, 36 above,
and further in view of YAMAYA ET AL (US 4,816,516).

YAMAYA ET AL discloses that it is well known in the art that polyimide and polyamide imide resins used in fluoropolymer-based coating compositions are typically derived from diamines and tetracarboxylic dianhydrides, wherein the dianhydrides can be aromatic, in order to make coating compositions with low friction and heat resistance. (line 23, col. 2 to line 25, col. 3)

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply known polyimides as disclosed in YAMAYA ET AL as the binder in the coating compositions of BROTHERS ET AL in order to obtain heat resistant, abrasion-resistant coatings for surfaces.

4. Claims 27-28, 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over:

BROTHERS ET AL (US 6,232,372), in view of RAU ET AL (US 5,093,403),

as applied to claim 19, 36 above,

and further in view of NASS ET AL (US 5,593,781).

NASS ET AL discloses that it is well known in the art to surface treat ceramic particles used as fillers in coating compositions with amine-based compounds in order to improve uniform dispersibility and to avoid undesirable agglomeration of particles. (line 35-46, col. 2; line 5-45, col. 3)

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply known surface-treatment methods to the inorganic filler particles of RAU ET AL in order to improve compatibility between the particles and the resins, as well as to prevent particle settling and agglomeration which would result in a non-uniform or defective surface.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vivian Chen whose telephone number is (571) 272-1506. The

examiner can normally be reached on Monday through Thursday from 8:30 AM to 6 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho, can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

The General Information telephone number for Technology Center 1700 is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

November 22, 2009

/Vivian Chen/
Primary Examiner, Art Unit 1794